



Personal Protective Measures (PPMs) Against Insects and Other Arthropods of Military Importance



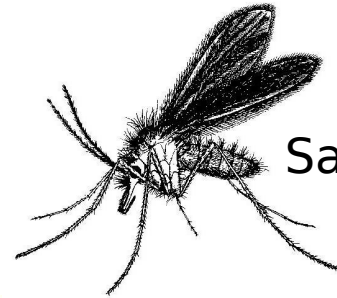
**U.S. Army Center for Health Promotion & Preventive
Medicine
Entomological Sciences Program
Aberdeen Proving Ground, MD 21010-5403
3 January 2005**



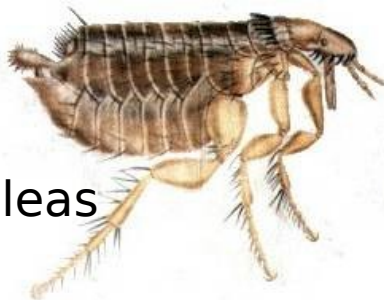
Vector-Borne Disease Threats



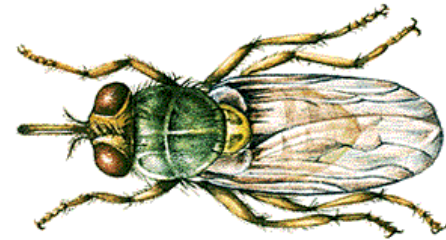
Ticks



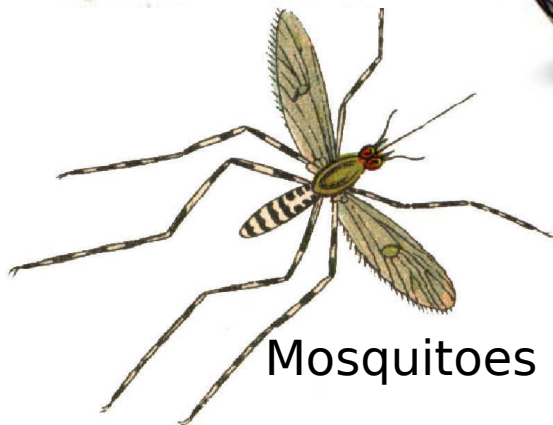
Sand flies



Fleas



Tsetse flies



Mosquitoes



Chigger
Mites



Lice



Sand fly



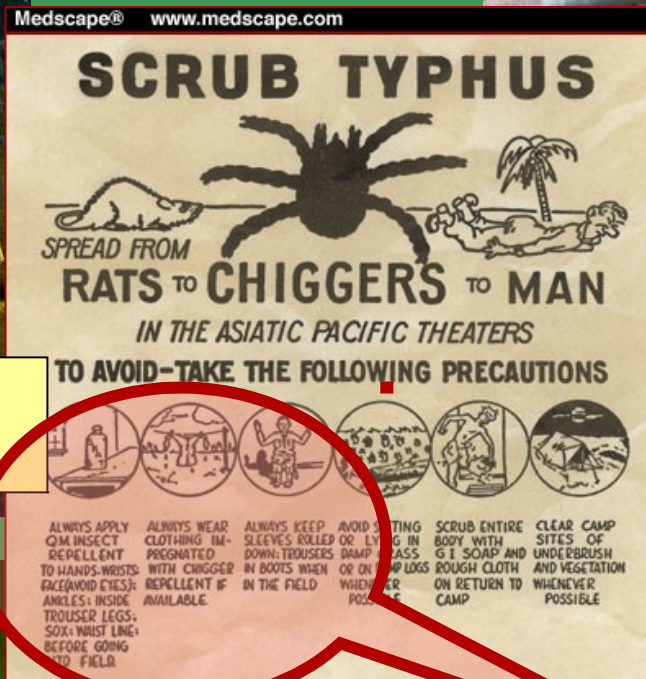
Cutaneous leishmaniasis



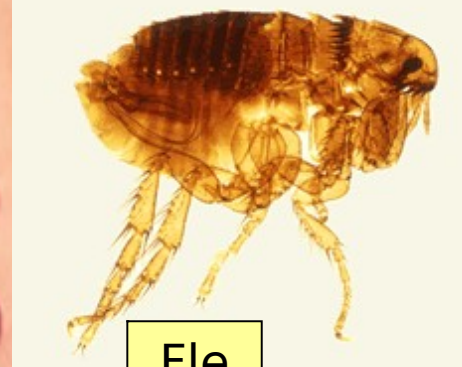
Sand fly bites



Chigger mite



Plague gangrene



Flea



Mosquit

Dengue hemorrhagic fever



Even during WWII, note: skin and clothing repellents plus proper clothing = DOD Insect Repellent System!!!



Permethrin
On
Uniform

+



Deet On
Exposed
Skin

+



Properly
Worn
Uniform

=

*Maximum
Protection*

**It's critical
for your
health**

DOD Insect Repellent System

**It's a
basic
training
task**

**It's DoD
Policy**

Permethrin Clothing Repellent



Standard military clothing repellent; most effective clothing repellent available.



Prevents mosquito bites through the fabric; repels or kills insects that contact the fabric.



Odorless, non-irritating.



Does NOT change appearance or IR signature of uniform.



Once dry after the initial treatment, permethrin does not come out when worn in rain or when fording streams.



Long-lasting: Treatment is resistant to washing and wear abrasion. Provides protection through multiple launderings.



Treated uniform can be laundered, starched, and pressed.



Permethrin does not directly protect bare skin that is next to the fabric, so use DEET repellent on exposed skin.

Permethrin Cautions



Do not treat underwear or cap.



Avoid permethrin contact with the face and eyes. Do not breathe spray vapors.



Wear gloves when handling wet, treated uniforms and when mixing permethrin solutions.



Permethrin is extremely toxic to fish and aquatic organisms; DO NOT allow runoff to contaminate water sources.



Do not dry clean treated uniform - dry-cleaning solvents will remove all the permethrin.

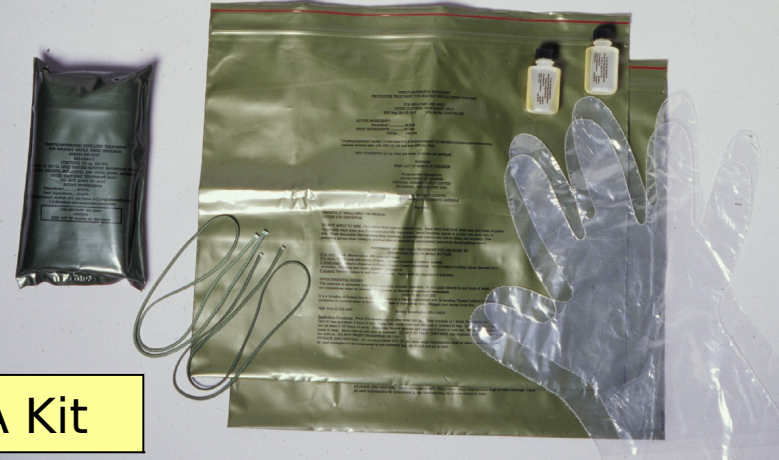
Permethrin Clothing Repellent



Four (4) Military Products



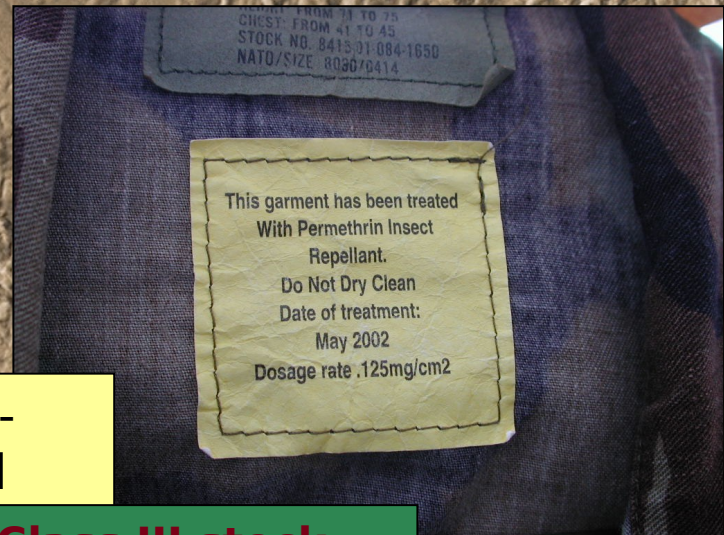
Aerosol Spray Can



IDA Kit



2-Gallon Sprayer



Factory-treated

NOTE: All repellents are Class III stock items.



Kit

Ziploc Bags

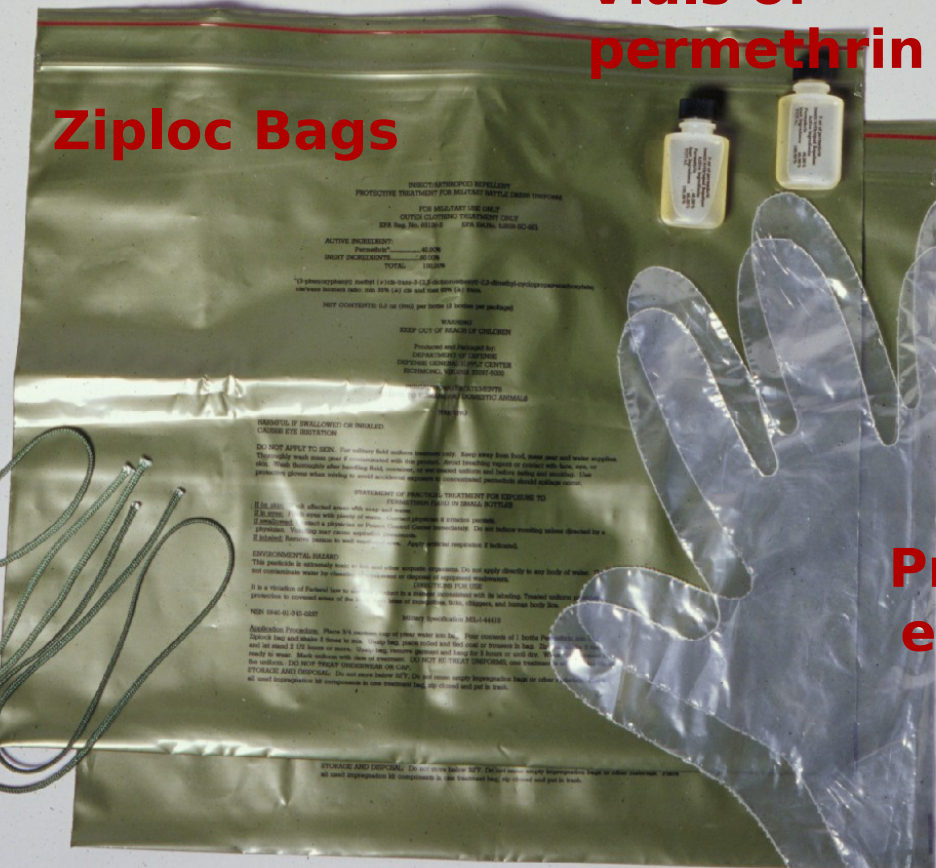
Vials of permethrin



Tie
S



Protectiv
e gloves



Kit Components

**Individual Dynamic Absorption
Kit (IDA)** **NSN 6840-01-345-0237**

IDA Kit, NSN 6840-01-345-0237



IDA Kit: Step 1



Assemble contents of the IDA kit. Fill canteen cup $\frac{3}{4}$ full with water.

Fold and roll up the garment tightly (pants and shirt separately). Tie with the strings that are provided in the kit.



IDA Kit: Step 2

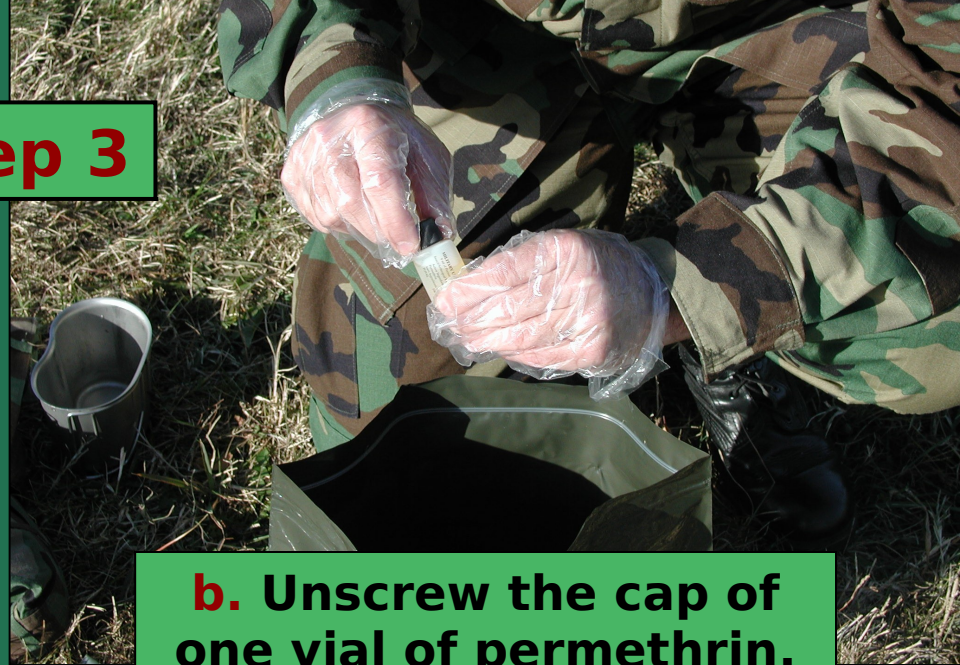


Add $\frac{3}{4}$ canteen cupful of water to a treatment bag.

IDA Kit: Step 3



a. Wear protective gloves.



b. Unscrew the cap of one vial of permethrin.



c. Pour contents of the vial into the water in the treatment bag.



d. The resulting solution will be milky white in color.



IDA Kit: Step 4

Gently agitate the treatment bag by rocking it back and forth a couple of times to completely mix the water and permethrin.

IDA Kit: Step 5



Place the rolled garment into the treatment bag.



IDA Kit: Step 6

Zip the treatment bag closed and gently agitate the bag by rocking it back and forth a couple of times to help initially wet the whole fabric roll.

IDA Kit: Step 7



Allow uniform to sit in the treatment bag for 3 hours so it can completely absorb the permethrin solution.

IDA Kit: Step 8



b. Hang the uniform until it is dry.



a. Wear protective gloves. Remove wet garment from treatment bag and untie string.



IDA Kit: Step 8 (cont.)



**If clothes hangers are not available,
hang the uniform directly over a
clothesline or branch, or lay it out flat
on the ground until it is dry.**

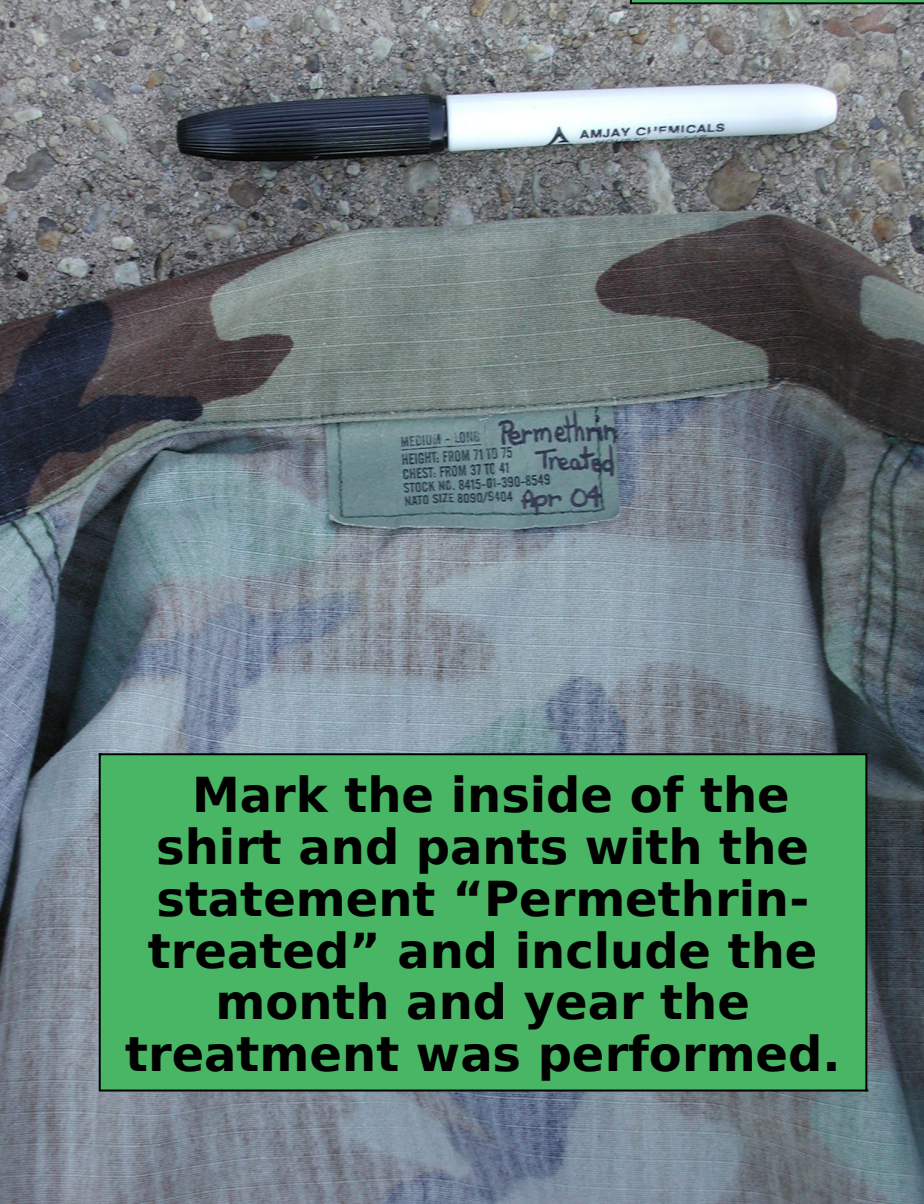
IDA Kit: Step 9



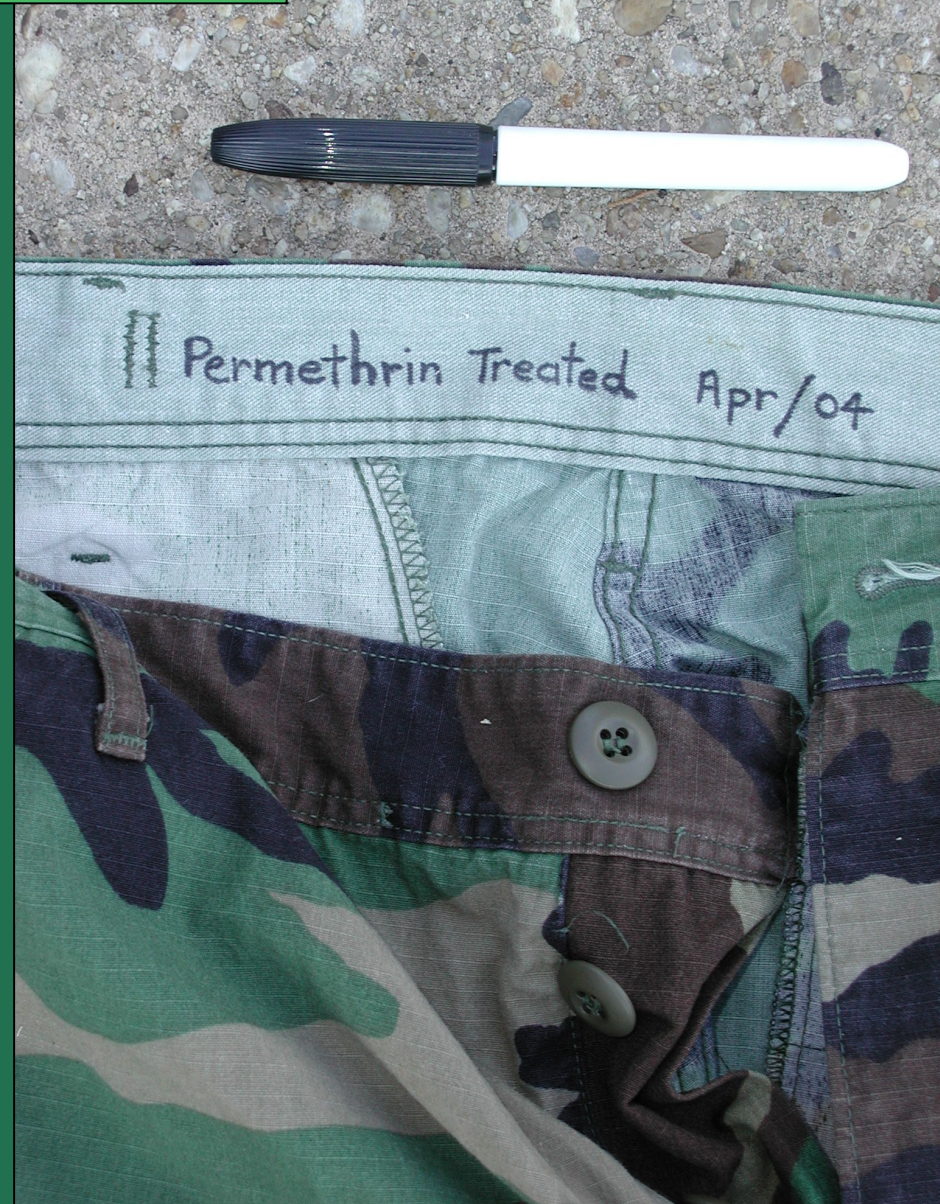
Place all used IDA Kit components into one treatment bag, seal the bag, and put in the trash.



IDA Kit: Final Step



Mark the inside of the shirt and pants with the statement "Permethrin-treated" and include the month and year the treatment was performed.



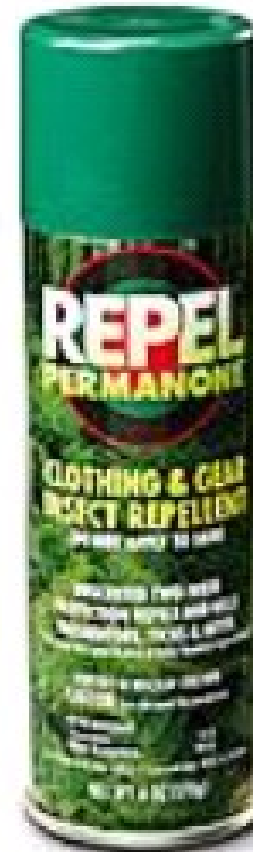
Permethrin Aerosol Spray Can

NSN 6840-01-278-1336

0.5% permethrin

1 application lasts through 6 washes

Military Product



Examples of
Commercial
Equivalents



**Applying
permethrin
aerosol spray to
the field uniform**

**The aerosol spray can
treatment is effective
through approximately 6
laundryings.**

**Permethrin Aerosol Spray
Can NSN 6840-01-278-
1336**



**Applying
permethrin aerosol
spray to the insect
head net**



**Applying permethrin
aerosol spray to the
bed net**

DEET Skin Repellent



**Standard military skin repellent;
most effective skin repellent
available.**



**Long-acting formulation
provides up to 12 hours of
protection against bites.**



**Apply DEET only to EXPOSED skin (skin not covered by
clothing).**



**DO NOT apply DEET to damaged skin (e.g. cuts,
sunburn, etc.)**



**Does NOT change the IR signature of the
individual.**



**The military product does NOT adversely
affect the seal of the individual protective
mask. Wash mask after use.**



**DEET can be safely used with camouflage
face paint; apply DEET first, followed by the
face paint. A compact with face paint plus
DEET is now available**

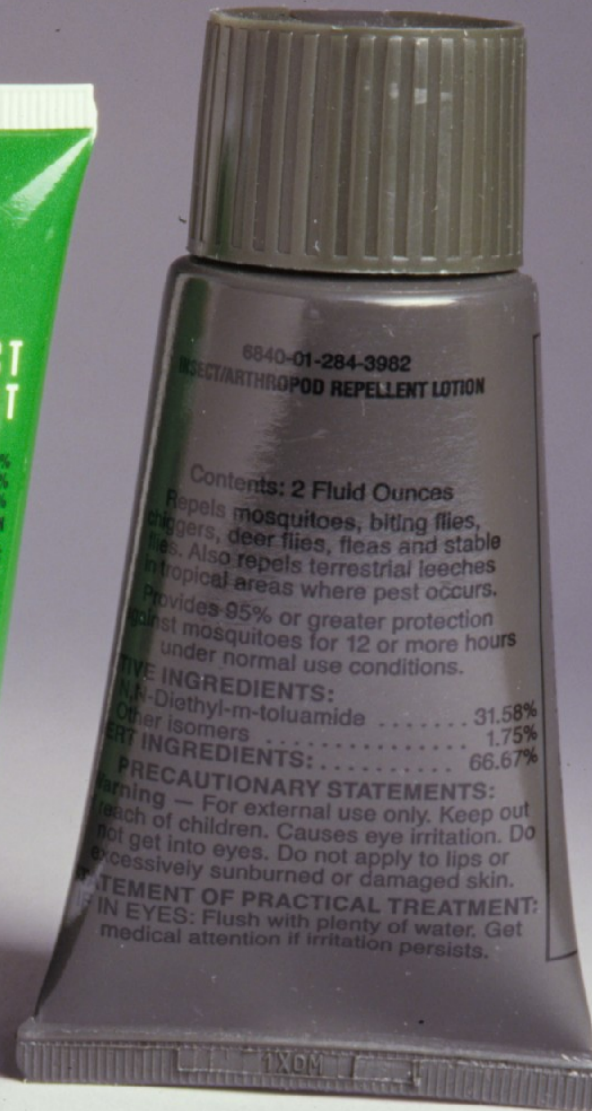


**DEET can be safely used with sunscreen; apply
sunscreen first, followed by the DEET
approximately ½ - 1 hour later.**

Standard Military DEET Skin Repellent



Commercial



Military

33% Controlled-Release DEET Lotion: NSN 6840-01-284-3982

Highest rated skin repellent available (Consumer Reports, May 2003)

Standard Military DEET Skin Repellent



**Dispense DEET
lotion into one
hand and rub
hands lightly
together**



**Apply a thin,
uniform coating of
DEET to all
exposed areas of
skin**



**DO NOT use
unauthorized
products for
personal
protection**

**Unlawful
Less
effective
Dangerous**



Animal Flea & Tick Collars are NOT for Human Use!

Review: INSECT REPELLENTS FOR SKIN AND CLOTHING

DEET lotion



NSN 6840-01-284-3982



- Apply a thin coat to **EXPOSED** skin
- One application lasts up to 12 hours

Permethrin

- Individual Dynamic Absorption Kit (IDA)
- Treatment lasts for life of the uniform



NSN 6840-01-345-0237



- Aerosol spray can
- Treatment lasts through 6 washes

Other Individual Countermeasures

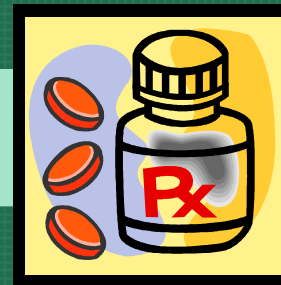
- Wear uniform properly to cover as much skin as possible and to prevent access of insects through openings in the clothing:
 - Roll sleeves down.
 - Tuck pants into boots.
 - Wear an undershirt; tuck it into the pants at waistline.

- DO NOT wear aftershave lotion, cologne or perfume in the field.

- Wash/inspect your body for insects and bites daily; Use the buddy system.

- Launder uniform routinely to remove insects and their eggs.

- Take malaria prophylaxis pills when directed to do so by your medical authority.



- Use a bed net while sleeping; treat it with permethrin.



Standard Military Bed Net, NSN 7210-00-266-9736



Tie your net under your cot or tuck it under your mat or sleeping bag!



Insects will rest under your net during the day and then be trapped inside with you at night.

Don't leave your net open during the day!

Insects will come in through openings and climb up your net from the ground.



Don't let your net hang loose from your cot!

Spray the standard military bed net with permethrin using either the two-gallon sprayer method, or for shorter-term protection, use the aerosol spray can.

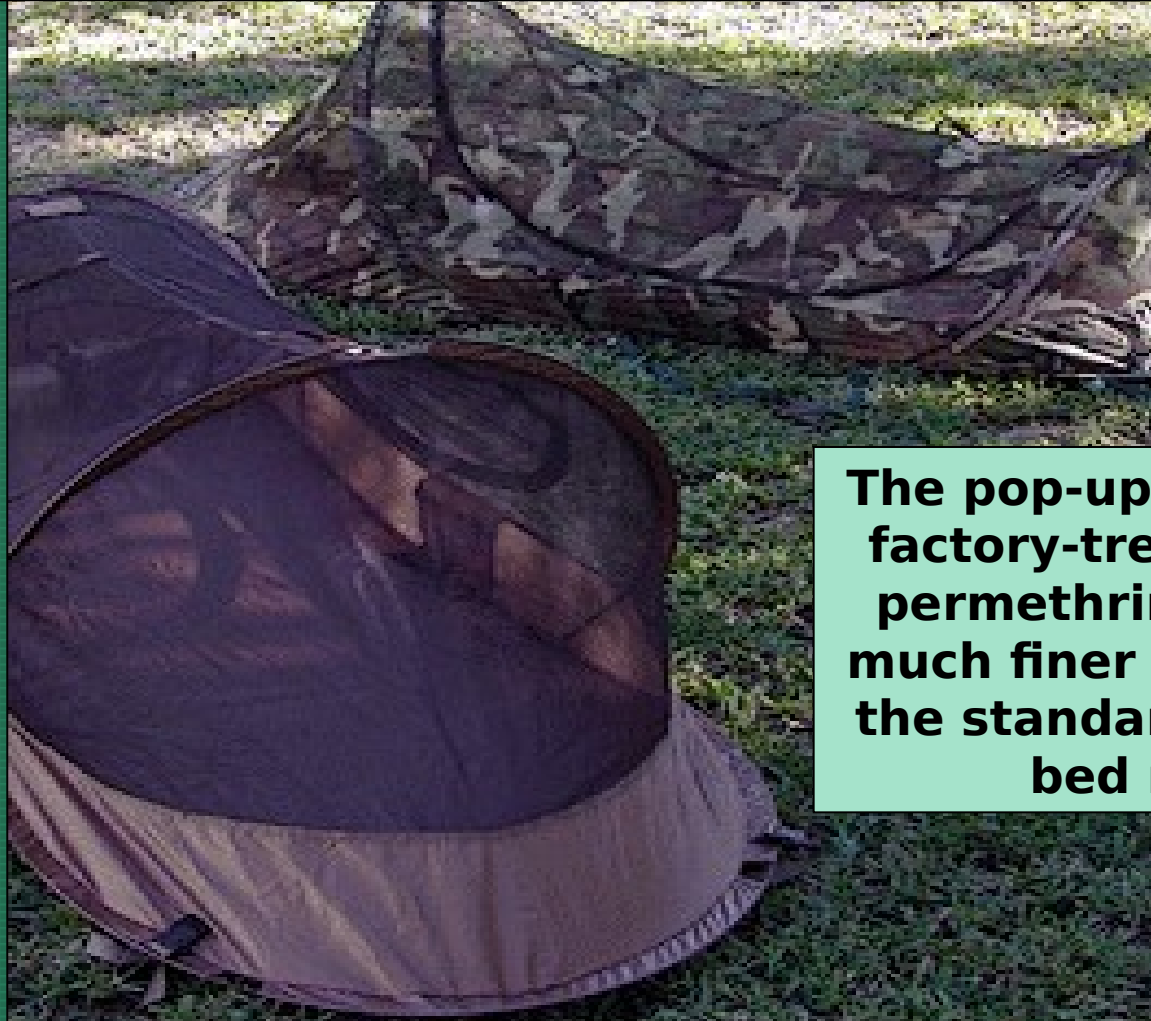


NSN 6840-01-334-2666



NSN 6840-01-278-1336

Light-weight, self-supporting, POP-UP bed net



**The pop-up bed net is
factory-treated with
permethrin and has
much finer mesh than
the standard military
bed net.**

● OD Green (Camouflage)

**NSN 8415-01-
516-4415**

● Coyote Brown

NSN 8415-01-518-7310

Useful References

1. Armed Forces Pest Management Board (AFPMB) Technical Guide (TG) #36, "Personal Protective Measures Against Insects and Other Arthropods of Military Significance,"

<http://www.afpmb.org/pubs/tims/tims.htm>

2. AFPMB Personal Protective Measures (PPMs) for Deployments <http://www.afpmb.org/coweb/ppm.htm>

3. U.S. Army Center for Health Promotion & Preventive Medicine (USACHPPM) web site, "DOD Insect Repellent System"

<http://chppm-www.apgea.army.mil/documents/DODInsectRepe>



**U.S. Army Center for Health Promotion & Preventive
Medicine**

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3 January 2005